

I Claim:

## 1. A current source circuit, comprising:

a component determining a magnitude of a current emitted from the current source circuit; and

a control apparatus connected to and controlling said component, a control process being carried out in dependence on conditions prevailing in a unit supplied with the current from the current source circuit.

2. The current source circuit according to claim 1, wherein said component is a transistor.

3. The current source circuit according to claim 2, wherein said control apparatus contains a current replication path in which a given current is caused to flow corresponding to the current, a specific multiple of the current, or a specific fraction of the current fed to the unit supplied with the current from the current source circuit.

4. The current source circuit according to claim 3, wherein said current replication path contains a first transistor having a substrate, a first terminal selected from the group consisting of gate terminals and base terminals, a second terminal selected from the group consisting of drain terminals

and collector terminals, and a third terminal selected from the group consisting of source terminals and emitter terminals, during operation of said first transistor said first, second and third terminals are substantially at a same potential with respect to said substrate as at corresponding connections of said transistor governing the magnitude of the current emitted from the current source circuit.

5. The current source circuit according to claim 4, wherein said current replication path contains a second transistor having a terminal selected from the group consisting of a gate terminal and a base terminal, a drain or collector potential of said first transistor is set for driving said terminal of said second transistor in a suitable manner from the unit supplied with the current.

6. The current source circuit according to claim 5, wherein said control apparatus contains a regulation apparatus, and said current replication path outputs a replicated current fed to said regulation apparatus.

7. The current source circuit according to claim 6, wherein said regulation apparatus receives a nominal current, and said regulation apparatus readjusts the magnitude of the current emitted from the current source circuit and supplied to the

unit such that the replicated current from said current replication path corresponds to the nominal current.

8. The current source circuit according to claim 6, wherein said regulation apparatus contains at least one third transistor.

9. The current source circuit according to claim 1, wherein:

said control apparatus is a control loop containing a first transistor, at least one second transistor, a third transistor, and at least two current sources;

said component has a control terminal and an output;

said first transistor having a first terminal selected from the group consisting of a gate terminal and a base terminal, a second terminal selected from the group consisting of a drain terminal and a collector terminal, and a third terminal selected from the group consisting of a source terminal and an emitter terminal;

said second transistor having a first terminal selected from the group consisting of a gate terminal and a base terminal, a second terminal selected from the group consisting of a drain terminal and a collector terminal, and a third terminal

selected from the group consisting of a source terminal and an emitter terminal;

said third transistor having a first terminal selected from the group consisting of a gate terminal and a base terminal, a second terminal selected from the group consisting of a drain terminal and a collector terminal, and a third terminal selected from the group consisting of a source terminal and an emitter terminal;

said second terminal of said first transistor connected to said third terminal of said second transistor;

said second terminal of said second transistor connected to a first of said current sources and said third terminal of said third transistor;

said second terminal of said third transistor connected to a second of said current sources, to said first terminal of said first transistor and to said control terminal of said component governing the magnitude of the current emitted from the current source circuit;

said first and second current sources being used to supply a nominal current and to supply and return an operating current for said control loop; and

said first terminal of said second transistor being driven such that a potential at said second terminal of said first transistor is substantially a same as that at said output of said component.